US-PAT-NO: 6246485

DOCUMENT-IDENTIFIER: US 6246485 B1

TITLE: Printer communication system and method

DATE-ISSUED: June 12, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Brown; Rickey Carter	Bardstown	KY	N/A	N/A
Kolb; Joseph Peterson	Lexington	KY	N/A	N/A
Songer; Gail Marie	Foster City	CA	N/A	N/A
Yohon, Jr.; Edward William	Lexington	KY	N/A	N/A

US-CL-CURRENT: 358/1.13, 358/1.14 , 358/1.16 , 358/296 , 358/404 , 358/443

ABSTRACT:

A printer communication system includes a printer (20) having a printer
controller (34) with memory (38) and a processor (36). The printer (20)

receives and transmits information through a port (40) to which a host computer
(10) is coupled. The printer controller (34) may be programmed to be operable
to receive configuration-related commands through the port (40), process the
configuration-related commands received by the port immediately provided that a
command is a safe command to process while the printer (20) is busy processing
a print job. The printer (20) may respond to the host computer (10) by
indicating that the change was successful or that the printer (20) must be
taken offline before the change may be made. The printer controller (34) is
programmed to be remotely taken offline and put back online. A symbol set list
command may be used by printer (20) to send symbol sets to host computer (10).
Font information may also be sent to a host computer (10) by a printer (20) so
that a font table including associated symbol sets may be constructed in
computer (10).

25 Claims, 9 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 6

---------- KWIC ---------

Brief Summary Text - BSTX (12):
   The present invention relates to method and apparatus that addresses the
disadvantages, problems, and needs set forth above. One aspect of the
invention relates to a printer, including a printer controller having a memory
for storing a plurality of **printer configuration** settings and a processor, and
a port coupled to the printer controller which receives signals from a host
computer, wherein the printer controller receives configuration change
information via the port and processes the configuration change information to
effect an **update** of one or more of the plurality of **printer configuration**
settings using the configuration change information while the printer is
processing a current print job if the **update** will not adversely affect the
processing of the current print job.

Claims Text - CLTX (4):
   wherein said printer controller receives configuration change information
via said port and processes said configuration change information to effect an
update of one or more of said plurality of **print r**

configuration settings using
said configuration change information while said printer is processing a
current print job if said **update** will not adversely affect the processing of
said current print job.

Claims Text - CLTX (5):

  2. The printer of claim 1, wherein said printer processor processes said
configuration change information to effect a substantially immediate **update** of
said one or more of said plurality of **printer configuration** settings using said
configuration change information.

Claims Text - CLTX (7):

  4. The printer of claim 1, wherein upon **updating said printer configuration**
settings said processor further **updates the printer configuration** environment
associated with the **updated** settings while said printer is processing said
current print job.

US-PAT-NO: 5625757

DOCUMENT-IDENTIFIER: US 5625757 A

TITLE: Printing system

DATE-ISSUED: April 29, 1997

US-CL-CURRENT: 358/1.14, 358/1.15

APPL-NO: 08/ 361226

DATE FILED: December 21, 1994

          FOREIGN-APPL-PRIORITY-DATA:
COUNTRY   APPL-NO   APPL-DATE
JP   5-326808   December 24, 1993
JP   6-046283   March 17, 1994

---------- KWIC ---------

Detailed Description Text - DETX (81):
    In this case, the printing system uses **polling** and "query of
the **printer**
controller status" shown in FIG. 10 and "asynchronous report
message" shown in
FIG. 11. The printing system further uses commands "stop",

"cancel", and
"restart" shown in FIG. 10.

Detailed Description Text - DETX (106):
   (2) The distributed printing management server 14 **updates the printer configuration** management table 7200 on the basis of the watching result,
thereby setting the table 7200 into the newest state (71-3).

Detailed Description Text - DETX (429):
   (a) Only one **printer configuration** management table exists in the printing
system. The table is provided in the distributed printing management server
and only such a server **updates**.

Detailed Description Text - DETX (456):
   (iv) When each printer/spooler control server detects a self status change
or a status change of the printer connected to the server, the printer/spooler
control server transfers a printer status transmission command (refer to FIG.
36) to the distributed printing management server, thereby reporting such a
status change. On the basis of such a report, the distributed printing
management server **updates** the status of the printer/spooler control server or

printer in the **printer configuration** management table.

Detailed Description Text - DETX (467):
   (iii) The distributed printing management server forms the connection
printer description table for such a host on the basis of the connection
information in the **printer configuration** management table. In this instance,
the forming date and time of the connection printer description table for such
a host in the file are **updated**.

Detailed Description Text - DETX (492):
   (1) The alive flags and statuses (1422, 1432, 1425, 1435, 1452, 1456, etc.)
of a printer/spooler control server 542 on a **printer configuration** table 5411
are **updated** by a method shown in FIG. 54.

Detailed Description Text - DETX (495):
   (3) When each printer/spooler control server detects a self status change or
a status change of the printer connected to the server, the printer/spooler
control server transfers a printer status transmission command 3 (5430) shown
in FIG. 36 to the distributed printing management server, thereby reporting
such a fact. On the basis of such a report, the distributed

printing
management server 541 **updates** the status of the **printer configuration**
management table 5411.

Detailed Description Text - DETX (496):
   In case of the network **printer, the printer** status change is detected by
using an asynchronous report 2 (5420). In case of the server direct coupling
printer, such a detection is executed by using a periodic watching [also
referred to as a **polling**; 1-2 (5410-2) and 2-3 (5410-3)].

Detailed Description Text - DETX (497):
   (4) It is now assumed that the above **updating of the printer configuration**
management table is executed after the printers adequate to the specifications
were retrieved and the job was registered in the printer/spooler control server
in a state in which the **updated** contents don't coincide with the real state of
the printer. Therefore, there is a case where an error based on the above
dissidence occurs at the time of the execution of the job by the
printer/spooler control server. In this case, the error processes are
performed as follows.

Detailed Description Text - DETX (520):

(6) The system manager of the printing system inputs the connection
information corresponding to the configuration change of the above items (1) to
(5) and **updates the printer configuration** management table by using the
"**printer configuration** registration tool" having the foregoing GUI. In this
instance, the same items as those shown in (3) (b) in the install of the
foregoing item 1. are **updated**.

Detailed Description Text - DETX (541):

(Note) In the present command, only the **polling** watching of the alive flag
is executed. Status changes other than the alive flags of the **printer**/spooler
control server and the **printers** which are controlled by this server are
asynchronously reported from the **printer**/spooler control server to the
distributed printing management server by using the **printer** status transmission
command.

US-PAT-NO: 6246485

DOCUMENT-IDENTIFIER: US 6246485 B1

TITLE: Printer communication system and method

DATE-ISSUED: June 12, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Brown; Rickey Carter	Bardstown	KY	N/A	N/A
Kolb; Joseph Peterson	Lexington	KY	N/A	N/A
Songer; Gail Marie	Foster City	CA	N/A	N/A
Yohon, Jr.; Edward William	Lexington	KY	N/A	N/A

US-CL-CURRENT: 358/1.13, 358/1.14 , 358/1.16 , 358/296 , 358/404 , 358/443

ABSTRACT:

   A printer communication system includes a printer (20) having a printer
controller (34) with memory (38) and a processor (36). The printer (20)

receives and transmits information through a port (40) to which a host computer
(10) is coupled. The printer controller (34) may be programmed to be operable
to receive configuration-related commands through the port (40), process the
configuration-related commands received by the port immediately provided that a
command is a safe command to process while the printer (20) is busy processing
a print job. The printer (20) may respond to the host computer (10) by
indicating that the change was successful or that the printer (20) must be
taken offline before the change may be made. The printer controller (34) is
programmed to be remotely taken offline and put back online. A symbol set list
command may be used by printer (20) to send symbol sets to host computer (10).
Font information may also be sent to a host computer (10) by a printer (20) so
that a font table including associated symbol sets may be constructed in
computer (10).

25 Claims, 9 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 6

---------- KWIC ---------

Brief Summary Text - BSTX (12):
   The present invention relates to method and apparatus that addresses the
disadvantages, problems, and needs set forth above. One aspect of the
invention relates to a printer, including a printer controller having a memory
for storing a plurality of **printer configuration** settings and a processor, and
a port coupled to the printer controller which receives signals from a host
computer, wherein the printer controller receives configuration change
information via the port and processes the configuration change information to
effect an **update** of one or more of the plurality of **printer configuration**
settings using the configuration change information while the printer is
processing a current print job if the **update** will not adversely affect the
processing of the current print job.

Detailed Description Text - DETX (20):
   State Manager 70 is a task which first learns of events external to the code
controller 34 that may occur to **printer** 20. State Manager 70 notes, for
example, if the **print r** cover has been opened and

orchestrates providing this
information back to users such as NPAP Task 54. State Manager 70 will become
aware of certain conditions due to hardware interrupts to the microprocessor of
printer 20, while other status information is checked by State Manager 70 on a
polling basis. **Printer** configuration changes and device status alerts are
passed from State Manager 70 to NPAP Task 54 for communication to attached host
computer 10 using NPAP. The NPAP will be described in more detail below.

Claims Text - CLTX (4):
   wherein said printer controller receives configuration change information
via said port and processes said configuration change information to effect an
update of one or more of said plurality of **printer configuration** settings using
said configuration change information while said printer is processing a
current print job if said **update** will not adversely affect the processing of
said current print job.

Claims Text - CLTX (5):
   2. The printer of claim 1, wherein said printer processor processes said
configuration change information to effect a substantially

immediate **update** of
said one or more of said plurality of **printer configuration**
settings using said
configuration change information.

Claims Text - CLTX (7):

   4. The printer of claim 1, wherein upon **updating said
printer configuration**
settings said processor further **updates the printer
configuration** environment
associated with the **updated** settings while said printer is
processing said
current print job.

DERWENT-ACC-NO: 1998-001980

DERWENT-WEEK: 200135

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TITLE: Printer communication and control system -
in which

          printer controller receives and processes
configuration

          change information to effect **update of printer
          configuration** settings

INVENTOR: BROWN, R C; KOLB, J P ; SONGER, G M ;
YOHON, E W

PRIORITY-DATA: 1996US-0652858 (May 23, 1996)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 809176 A2	November 26, 1997	E	026	G06F 003/12
US 6246485 B1	June 12, 2001	N/A	000	B41B 015/00
AU 9723574 A	November 27, 1997	N/A	000	G06F 013/10
CA 2203445 A	November 23, 1997	N/A	000	G06F 003/12

JP 10129083 A   May 19, 1998   N/A   026
   B41J 029/38
KR 97076287 A   December 12, 1997   N/A
000   G06F 013/10
MX 9703805 A1   April 1, 1998   N/A   000
   B41L 001/00
AU 719748 B   May 18, 2000   N/A   000
   G06F 013/10

INT-CL (IPC): B41B015/00, B41J015/00 , B41J029/38 ,
B41L001/00 ,
G03G021/00 , G06F003/12 , G06F013/10 , G06F015/00 ,
H04L029/10 ,
H04N001/21

ABSTRACTED-PUB-NO: EP 809176A

BASIC-ABSTRACT:

The printer (20) includes a printer controller (24) having a
memory (38) for
storing printer configuration settings, and a processor (36). A
port (40)
coupled to the printer controller (34) receives signals from a
host computer.
The printer controller (34) receives configuration change
information via the
port (40).

The printer controller (34) processes the configuration change
information to
effect an **update** of one or more of the **printer configuration**

settings using the
configuration change information, while the printer (20) is
processing the a
current print job if the **update** will not adversely affect the
processing of the
current print job.

ADVANTAGE - Allows for remote control and monitoring of
printer including
configuration changes, independently of any control panel on
printer. Enables
safe-printer-configuration changes to be made immediately by
printer.

ABSTRACTED-PUB-NO: US 6246485B

EQUIVALENT-ABSTRACTS:

The printer (20) includes a printer controller (24) having a
memory (38) for
storing printer configuration settings, and a processor (36). A
port (40)
coupled to the printer controller (34) receives signals from a
host computer.
The printer controller (34) receives configuration change
information via the
port (40).

The printer controller (34) processes the configuration change
information to
effect an **update** of one or more of the **printer configuration**
settings using the
configuration change information, while the printer (20) is

processing the a
current print job if the **update** will not adversely affect the
processing of the
current print job.

ADVANTAGE - Allows for remote control and monitoring of
printer including
configuration changes, independently of any control panel on
printer. Enables
safe-printer-configuration changes to be made immediately by
printer.

---------- KWIC ---------

Basic Abstract Text - ABTX (2):
   The printer controller (34) processes the configuration
change information
to effect an **update** of one or more of the **printer
configuration** settings using
the configuration change information, while the printer (20) is
processing the
a current print job if the **update** will not adversely affect the
processing of
the current print job.

Title - TIX (1):
   Printer communication and control system - in which printer
controller
receives and processes configuration change information to
effect **update of**

printer configuration settings

Equivalent Abstract Text - ABEQ (2):

   The printer controller (34) processes the configuration change information
to effect an **update** of one or more of the **printer configuration** settings using
the configuration change information, while the printer (20) is processing the
a current print job if the **update** will not adversely affect the processing of
the current print job.

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US-PAT-NO: 5625757

DOCUMENT-IDENTIFIER: US 5625757 A

TITLE: Printing system

DATE-ISSUED: April 29, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kageyama; Seiji	Yokohama	N/A	N/A	JP
Matsumoto; Satoru	Yokohama	N/A	N/A	JP
Kitagawa; Makoto	Fujisawa	N/A	N/A	JP
Shimakawa; Takuya	Yokohama	N/A	N/A	JP
Kazama; Junichi	Yokohama	N/A	N/A	JP
Okada; Tadashi	Hadano	N/A	N/A	JP

US-CL-CURRENT: 358/1.14, 358/1.15

ABSTRACT:

In a printing system including a plurality of terminal

equipment, a
plurality of printers which can be shared by the terminal
equipment, one or
more printer/spooler control servers each for receiving a print
from the
terminal equipment and for controlling the print by the printer,
and a
distributed printing management server, for various errors
which occur in the
printers, the contents of the errors are informed to the user
and an error
recovery process according to the error is realized. Thus, a
use efficiency,
performance, reliability, and serviceability as a printing system
are improved.

11 Claims, 107 Drawing figures

Exemplary Claim Number: 7

Number of Drawing Sheets: 96

---------- KWIC ---------

Detailed Description Text - DETX (106):
    (2) The distributed printing management server 14 **updates
the printer
configuration** management table 7200 on the basis of the
watching result,
thereby setting the table 7200 into the newest state (71-3).

Detailed Description Text - DETX (429):

(a) Only one **printer configuration** management table exists in the printing
system. The table is provided in the distributed printing management server
and only such a server **updates**.

Detailed Description Text - DETX (456):

(iv) When each printer/spooler control server detects a self status change
or a status change of the printer connected to the server, the printer/spooler
control server transfers a printer status transmission command (refer to FIG.
36) to the distributed printing management server, thereby reporting such a
status change. On the basis of such a report, the distributed printing
management server **updates** the status of the printer/spooler control server or
printer in the **printer configuration** management table.

Detailed Description Text - DETX (467):

(iii) The distributed printing management server forms the connection
printer description table for such a host on the basis of the connection
information in the **printer configuration** management table. In this instance,
the forming date and time of the connection printer description

table for such
a host in the file are **updated**.

Detailed Description Text - DETX (492):
   (1) The alive flags and statuses (1422, 1432, 1425, 1435,
1452, 1456, etc.)
of a printer/spooler control server 542 on a **printer
configuration** table 5411
are **updated** by a method shown in FIG. 54.

Detailed Description Text - DETX (495):
   (3) When each printer/spooler control server detects a self
status change or
a status change of the printer connected to the server, the
printer/spooler
control server transfers a printer status transmission command
3 (5430) shown
in FIG. 36 to the distributed printing management server,
thereby reporting
such a fact. On the basis of such a report, the distributed
printing
management server 541 **updates** the status of the **printer
configuration**
management table 5411.

Detailed Description Text - DETX (497):
   (4) It is now assumed that the above **updating of the
printer configuration**
management table is executed after the printers adequate to
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were retrieved and the job was registered in the printer/spooler control server
in a state in which the **updated** contents don't coincide with the real state of
the printer. Therefore, there is a case where an error based on the above
dissidence occurs at the time of the execution of the job by the printer/spooler control server. In this case, the error processes are
performed as follows.

Detailed Description Text - DETX (520):
    (6) The system manager of the printing system inputs the connection
information corresponding to the configuration change of the above items (1) to
(5) and **updates the printer configuration** management table by using the
"**printer configuration** registration tool" having the foregoing GUI. In this
instance, the same items as those shown in (3) (b) in the install of the
foregoing item 1. are **updated**.